

Jellyfish

Wadden Sea

According to Brotz et al. the term 'jellyfish' lacks a formal definition (2012). This study will use the same operational definition as described in Brotz et al. (2012). Therefore 'jellyfish' will encompass all gelatinous zooplankton that include medusae of the phylum *Cnidaria* (*Scyphomedusae*, *Hydromedusae*, *Cubomedusae*, and *Siphonophores*) and Ctenophora (Brotz et al., 2012). Jellyfish consume a diverse array of species, which consists of zooplankton, small crustaceans, and in some cases, small fish and other jellyfish (Oceana Europe, 2022). This study identified 26 species of jellyfish in the Wadden Sea, which include: Moon jellyfish (*Aurelia aurita*), Compass jellyfish (*Chrysaora hysoscella*), Pacific Goose-berry (*Pleurobrachia bachei*), Pink slipper comb jelly (*Beroë cucumis*), and Wart comb jelly (*Mnemiopsis leidyi*) (Gittenberger et al., 2015).



History/ Population trends

The oldest known species of swimming jellyfish is an unnamed species of jellyfish from the Cambrian period (Moysiuk & Caron, 2023). The fossil of this jellyfish indicates that it lived around 505-million years ago (Moysiuk & Caron, 2023). Since then, jellyfish have diversified and can now be found in all seas and oceans across the world (Oceana Europe, 2022). In more recent years, reports of mass occurrence of large jellyfish have increased in marine ecosystems worldwide (Holst, 2012). These jellyfish 'blooms' often have negative impacts on fisheries, industries, tourism and ecosystems (Holst, 2012). This is because of several reasons, which include: outcompeting fish for available food, clogging up fishing nets and coastal cooling systems, and the stinging of swimming tourists (Holst, 2012). One possible explanation, according to Holst, for these recent increases of jellyfish blooms is due to the increase of average global water temperatures (2012).

Miscellaneous

- The Lion's mane jellyfish is one of the largest jellyfish in the world, with a maximum diameter size of 200cm (Oceana, 2024). The largest specimen ever caught reached a total length of 35,5 meters, rivaling the Blue whale in size (Oceana, 2024).
- The deadliest jellyfish in the world is the Irukandji jellyfish (*Malo kingi*), having officially claimed the lives of several people each year since 2002 and several deaths where it is considered a likely suspect, but not confirmed killer (Gershwin et al., 2013). This is because it has some of the world's strongest natural venom (Gershwin et al., 2013).

Sources

- Broetz, L., Cheung, W. W. L., Kleisner, K., Pakhomov, E., & Pauly, D. (2012). Increasing jellyfish populations: trends in Large Marine Ecosystems. *Hydrobiologia*, 690(1), 3–20. <https://doi.org/10.1007/s10750-012-1039-7>
- Gershwin, L., Richardson, A. J., Winkel, K. D., Fenner, P. J., Lippmann, J., Hore, R., Avila-Soria, G., Brewer, D., Kloser, R. J., Steven, A., & Condie, S. (2013). Biology and ecology of irukandji jellyfish (Cnidaria: cubozoa). *Advances in Marine Biology*, 1–85. <https://doi.org/10.1016/b978-0-12-408096-6.00001-8>
- Gittenberger, A., Dr., Rensing, M., Drs., Dekker, R., Drs., Niemantsverdriet, P., Drs., Schrieken, N., BiOrganized, Stegenga, H., Dr., Office for Risk Assessment and Research, The Netherlands Food and Customer Product Safety Authority of the Ministry of Economical Affairs, Gittenberger, A., Dr., Philippart, C. J. M., Dr. ir., & Smolders, A. A. J., Drs. (2015). Native and non-native species of the Dutch Wadden Sea in 2014. In *GiMaRIS Report 2015_08*. Retrieved November 13, 2024, from <https://www.nvwa.nl/binaries/nvwa/documenten/dier/dieren-in-de-natuur/exoten/risicobeoordelingen/native-and-non-native-species-of-the-dutch-wadden-sea/Native+and+non-native+species+of+the+Dutch+Wadden+Sea.pdf>
- Holst, S. (2012). Effects of climate warming on strobilation and ephyra production of North Sea scyphozoan jellyfish. *Hydrobiologia*, 690(1), 127–140. <https://doi.org/10.1007/s10750-012-1043-y>
- Moysiuk, J., & Caron, J.-B. (2023, August 3). *Researchers discover the oldest species of swimming jellyfish*. University of Toronto, Faculty of Arts & Science. Retrieved November 14, 2024, from <https://www.artsci.utoronto.ca/news/media-researchers-discover-oldest-species-swimming-jellyfish>
- Oceana. (2024, September 25). *Lion's Mane Jellyfish* | Oceana. Retrieved November 14, 2024, from <https://oceana.org/marine-life/lions-mane-jellyfish/>

Oceana Europe. (2022, September 27). *Feature: About Jellyfish - Oceana Europe*. Retrieved November 14, 2024, from <https://europe.oceana.org/feature-about-jellyfish-0/#:~:text=They%20feed%20mainly%20on%20zooplankton,body%20before%20it%20is%20digested>.